

FOLIA TAXONOMICA 2. NEW SPECIES OF *PASSIFLORA*
SUBGENUS *PASSIFLORA* (PASSIFLORACEAE) FROM THE GUIANAS

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ABSTRACT

Two new species of *Passiflora* (Passifloraceae) with red flowers are described from the Guianas. The new species belong in subgenus *Passiflora* supersection *Coccinea* and are close to *Passiflora coccinea*. ***Passiflora arta*** from Guyana is easily distinguished from *P. coccinea* by its narrow leaves and bracts. ***Passiflora compar*** from Guyana and French Guiana has much thinner leaves without a continuously glandular margin. The corona and operculum of both species present morphological differences between themselves and with *P. coccinea*. A key to the species of supersection *Coccinea* is provided.

RÉSUMÉ

Deux nouvelles espèces de *Passiflora* (Passifloraceae) des Guyanes à fleurs rouges sont décrites. Les nouvelles espèces appartiennent au sous-genre *Passiflora* supersection *Coccinea*. ***Passiflora arta*** de Guyana est facile à distinguer de *P. coccinea* grâce à ses feuilles et ses bractées étroites. ***Passiflora compar*** de Guyana et de Guyane a des feuilles plus minces dont la marge n'est pas glanduleuse de façon continue. La couronne et l'operculum des deux espèces présentent des différences entre elles et avec *P. coccinea*. Une clé des espèces de la supersection *Coccinea* est donnée.

Passiflora L. is the largest genus of the Passifloraceae with around 530 described species (Feuillet & MacDougal 2007). Although members of the genus *Passiflora* L. are usually very visible and well collected, more than 27 species of passionflowers have been added to the flora of the Guianas since Killip (1937 & 1938) who mentioned the presence in the Guianas of 33 species. Including the two new species described below, this is an 82% increase. Although they have bright red flowers, the two species described herein have been overlooked for a long time because they are uncommon and close enough to the most common species in the Guianas, *P. coccinea* Aubl., to have been confused with it and rarely collected. The two new species belong in subg. *Passiflora* supersect. *Coccinea* Feuillet & J.M. MacDougal.

Passiflora supersection *Coccinea* includes 13 South American species, two of them expanding into Central America. Traditionally these species have been included in subg. *Distephana* (Juss. ex DC.) Killip (now a supersection). They are here separated from *Distephana* on the base of a series of morphological characters. The leaf blades are hairy, glandular at margin, dentate or serrate or crenate. The bracts are foliaceous, usually red. The erect and compact corona is much smaller than in supersect. *Passiflora*, *Stipulata* Feuillet & J.M. MacDougal and *Laurifolia* (Cervi) Feuillet & J.M. MacDougal, but larger than the reduced corona of supersect. *Distephana* (DC.) Feuillet & J.M. MacDougal and *Tacsonia* (Juss.) Feuillet & J.M. MacDougal.

Passiflora arta Feuillet, sp. nov. (Fig. 1A–C). TYPE: GUYANA. U. TAKUTU - U. ESSEQUIBO: Acarai Mts., ridge ascending to summit of unnamed peak, 6 km S of Sipu River, 1°22'N, 58°56'W, 700 m, fl., 30 Aug 1998, H.D. Clarke 7230 (HOLOTYPE: US).

Passiflora arta in subg. *Passiflora* supersect. *Coccinea* pertinens, *P. coccineae* affinis; foliis et bracteis angusto-ellipticis, corona uniseriata, operculo longiore differt.

Liana probably reaching the canopy. Vegetative parts with short rufous trichomes. Young stems terete, striated. Tendrils long, base strong and straight. Vegetative bud although part of the axillary complex (leaves, stipules, pedicel, tendril), clearly in apical position on the stem, 5–7 mm away from the petiole, prophylls acute at apex. Stipule linear, 6 × 0.2 mm, soon deciduous. Leaves: petiole 5–13 mm long, with 2 lateral glands at the base; glands sessile, round, ca. 1 mm in diam., glabrous; blade narrow-elliptic, 7–7.5 × 1.2–1.5 cm, acuminate, mucronate at the apex, rounded to acute at the base, the margin shortly glandular serrate

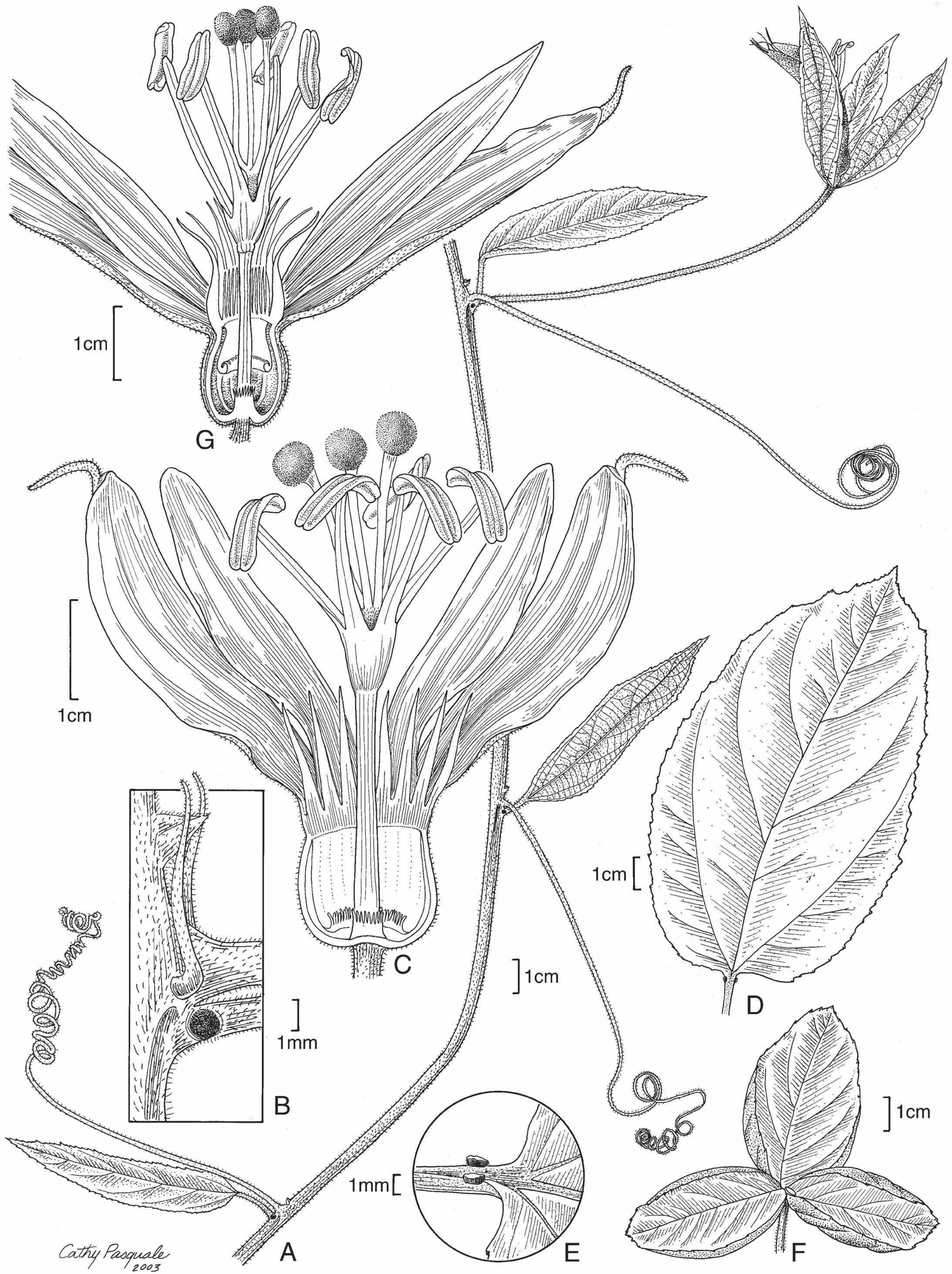


FIG. 1. A–C. *Passiflora arta*: A. Stem with leaves and old flower; B. Node with base of petiole, stipules, tendril, and vegetative bud; C. Flower longitudinal section; D–G. *Passiflora coccinea*: D. Leaf; E. Apex of the petiole with glands; F. Bracts; G. Flower longitudinal section. A–C from Clarke 7230 (US); D–G from Feuillet 1423 (US).

to bi-serrate, drying olivaceous adaxially and yellow-brown abaxially, 4–6 main lateral veins on each side of the midrib, tertiary venation reticulate. Inflorescence sessile, 1-flowered. Pedicels 11 cm long, with short pubescence. Bracts three, verticillate at 2.5 mm below the flower, pink red, narrow-elliptic, 5–5.5 × 1–1.3 cm, free to base, acuminate at the apex, glandular crenate to loosely serrate at the margin, with short scattered trichomes on both surfaces. Flowers pink red: hypanthium 9 mm long, round at the base, then short-cylindric, short pubescent outside, glabrous inside; sepals narrow-oblong, 3–3.5 cm long plus a 9 mm long, subapical awn, 3–7 mm broad, short pubescent in the parts exposed in bud, otherwise glabrous; petals similar to the sepals, thinner, not awned, glabrous; corona in 1 row of filaments 8–12 mm long, subulate, erect, slightly leaning against the androgynophore, linked in a 1.5 mm long membrane at the base, glabrous; operculum borne at the top of the hypanthium, membranous, shortly laciniate at the margin, 9–10 mm long, dependent to the base of the hypanthium, then shortly recurved inward, glabrous; disc annular at the bottom of the hypanthium; limen tubular membranous, dentate at the margin, 2 mm long, surrounding the base of the androgynophore, glabrous; androgynophore cylindric, ca. 2 cm long, glabrous; stamen glabrous, filaments flat, 13–15 × 2 mm, joint for 2–3 mm in a membrane at base, anthers dorsifixed, rectangular, 7 × 2 mm; gynophore shorter than the membrane at the base of the stamens; ovary 3–3.5 mm long, 2–2.5 mm in diam., subglobose, densely pubescent; styles 10–12 mm long, glabrous; stigmas ca. 2.5 × 3.5 mm, glabrous. Fruit not seen.

Distribution.—*Passiflora arta* is known only from the type locality, Acarai Mts., Upper Takutu - Upper Essequibo region in Guyana. It inhabits a dense forest on brown sand at 700 m. The forest was dominated by *Clusia* L., *Oenocarpus* Mart., and *Palicourea* Aubl. species.

Because of leaves with serrate margin, bracts with glandular-serrate margin, red bracts and perianth, short corona filaments, straight, and forming a cone appressed to the androgynophore, *Passiflora arta* sp. nov. clearly belong in *P. supersect. Coccinea*. In this group it is close to *P. coccinea* (figure 1 D–G; plate 105a in Feuillet 2002b) which has a large Amazonian and Guianan distribution. The Guianan *P. arta* has narrow-elliptic rather than ovate leaves and bracts, a uniseriate rather than triseriate corona, and an operculum dependent nearly to the bottom rather than to the middle of the hypanthium. Differences with other species of *Passiflora supersect. Coccinea* are summed up in the key below. The flower measurements have been done on the dried flower of the holotype.

Etymology.—The Latin specific epithet means “narrow” (street) or “thin” (person). It refers to the narrow leaves and bracts of the new species as compared to the sympatric *P. coccinea*.

Passiflora compar Feuillet, sp. nov. (Figs. 2, 3). TYPE: GUYANA. POTARO–SIPARUNI: 1–3 km NNE of Kato along trail to Paramakatoi, 4°9'N, 59°49'W, 675 m, 19 Mar 1989, fl. & fr., L.J. Gillespie 873 (HOLOTYPE: US (fl.); ISOTYPES: BRIT, MO, K, NY, US (fr.)).

Passiflora compar in subg. *Passiflora supersect. Coccinea* pertinens, *P. coccineae* affinis; foliis subtiliter biserratis, tubo floris brevior, corona biseriata, prima serie longitudine secundam paulo superanti, operculo vix brevior quam tubum differt.

Liana 8 m tall (*de Granville* 12498), probably reaching the canopy. Vegetative parts with short white or rufous trichomes. Young stems terete to subangular, striated. Tendrils long, base thin and straight. Vegetative bud although part of the axillary complex (leaves, stipules, pedicel, tendril), clearly in apical position on the stem, 5–7 mm away from the petiole, with 6 long acuminate prophylls. Stipule filiform, 8–12 × 0.2 mm, dentate-glandular at margin, soon deciduous. Leaves: petiole 5–13 mm long, with 2 lateral glands at the base, one petiole (of *de Granville* 12498) with a pair of smaller glands at the apex; glands sessile, round, ca. 1 mm in diam., glabrous; blade oblong, 3–7 × 1.5–3 cm, acuminate, cuspidate at the apex, rounded at the base, the margin shortly glandular serrate to bi-serrate, drying olivaceous adaxially and yellow-brown abaxially, 3–5 main lateral veins on each side of the midrib, tertiary venation reticulate. Inflorescence sessile, 1-flowered. Pedicels 5–9 cm long, with short pubescence. Bracts three, verticillate at 2–3 mm below the flower, pink red or orange red, oval, 4.5–5.5 × 2–3 cm, free to base, rounded at the apex, loosely glandular crenate at the margin to glandular serrate at the apex, with short scattered trichomes on both surfaces. Flowers: hypanthium 7–8 mm long, round at the base, then short-cylindric, short pubescent outside, glabrous inside; sepals narrow-oblong, 2.5 cm long plus a 7 mm long, subapical awn, 8 mm broad, “pale red” (sic!)

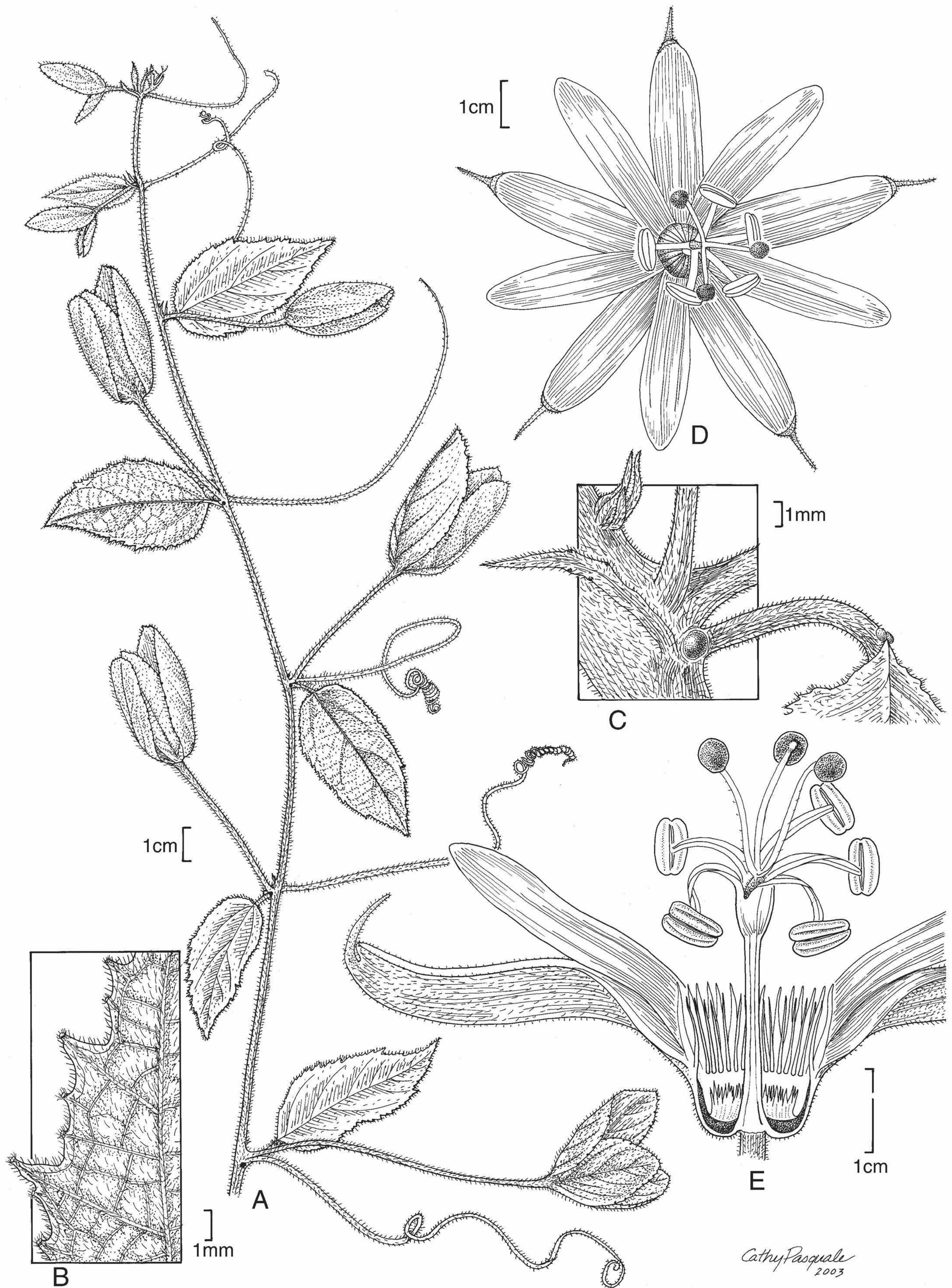


FIG. 2. *Passiflora compar*: A. Stem with leaves and flower buds; B. Leaf margin; C. Node with base of petiole, a stipule, tendril, pedicel, and vegetative bud; D. Flower, face view; E. Flower longitudinal section. A–B from Jansen-Jacobs et al. 1262 (US); C: from de Granville 12498 (US); D–E from Jansen-Jacobs et al. 1262 (US) & photograph by C. Feuillet.



FIG. 3. *Passiflora compar* Feuillet, Gillespie 873 (photo L. Gillespie).

adaxially, red abaxially, short pubescent in the parts exposed in bud, otherwise glabrous; petals similar to the sepals, thinner, not awned, red, glabrous; corona in 2 rows of filaments, filaments 5–7 mm long, outer subulate, inner filiform, red or pink, erect, slightly leaning against the androgynophore, free, glabrous; operculum membranous, shortly laciniate at the margin, 8–9 mm long, borne at the top of the hypanthium, dependent to the base of the hypanthium, then long recurved inward, glabrous; disc annular at the bottom of the hypanthium; limen tubular membranous, upper third laciniate, 5 mm long, surrounding the base of the androgynophore, glabrous; androgynophore cylindric, ca. 1.–2 cm long, glabrous; stamen glabrous, filaments flat, 12–15 × 1 mm, joint for 3–4 mm in a membrane at base, anthers dorsifixed, rectangular, 5–6 × 2.5 mm, green, pollen yellow; gynophore shorter than the membrane at the base of the stamens; ovary 5 mm long, 3 mm in diam., subglobose, densely pubescent; styles 10–12 mm long, thin, red or rose with red spots, with scattered trichomes; stigmas ca. 2.5 × 2 mm, yellow, glabrous. Fruit not seen.

Distribution.—*Passiflora compar* is known in Guyana from the Kanuku Mts. (Upper Takutu–Upper Essequibo) and near Kato and in French Guiana from the upper Maroni basin, the Saül area, and the hills SW of Cayenne. It inhabits moist forest below 400 m of elevation, near rivers or on slopes.

Because of serrate leaf margins, bracts with glandular-serrate margin, red bracts and perianth, short corona filaments, straight, and forming a cone appressed to the androgynophore, *Passiflora compar* sp. nov. clearly belong in *P. supersect. Coccinea*. In this group it is close to *P. coccinea* (Fig. 1 D–G) which has a large Amazonian and Guianan distribution. The Guianan *P. compar* has thin rather than leathery or rubbery leaves and bracts, a corona in two rows rather than three, and an operculum dependent nearly to the bottom rather than to the middle of the hypanthium. Differences with other species of *Passiflora supersect. Coccinea* are summed up in the key below.

Etymology.—The Latin noun in apposition, “compar” means “equal, companion” and refers to the second row of corona filaments nearly as long as the first row, and to the fact that this new species stands close to *P. coccinea*.

PARATYPES: **GUYANA. U. Takutu - U. Essequibo:** Kanuku Mts., 3°08'N, 59°23'W, 280–400 m, fl. & fr., 20 Feb 1985, M.J. Jansen-Jacobs, C. Feuillet, P. Hiepko, L.E. Skog & B.J.H. ter Welle 330 (B, BBS, BRG, CAY, K, P, NY, U, US); 3°21'N, 59°29'W, 140–320 m, 26 Nov 1987, Jansen-Jacobs et al. 1262 (BRG, U, US). **FRENCH GUIANA:** Bassin de la Litani (= upper Maroni), Saut Lavaud, 2°45'N, 54°14'W, 140 m, 15 Sep. 1994, de Granville 12498 (CAY, US).

KEY TO THE SPECIES OF *PASSIFLORA* SUPERSECT. *COCCINEA*

1. Bracts linear, less than 5 mm wide.
 2. Peduncle 10–15 cm long; petals white, corona 3 ranked, the 2 outmost of filaments free to base _____ **P. amicorum** Wurdack
 2. Peduncle up to 5 cm long; petals pink or red, corona 2 ranked, both fused in a membrane half to two third of the way up _____ **P. quadriglandulosa** Rodschied
1. Bracts lanceolate to oblong-lanceolate, mostly more than 5 mm wide.
 3. Leaves always unlobed.
 4. Leaf margin crenate
 5. Operculum erect _____ **P. aimae** Annonay & Feuillet
 5. Operculum decumbent _____ **P. longicuspis** Vanderplank
 4. Leaf margin dentate or serrate.
 6. Stipules fimbriate _____ **P. callimorpha** Harms
 6. Stipules glandular-serrate or linear.
 7. Operculum filamentose.
 8. Corona with 4 rows of filaments _____ **P. quadrifaria** Vanderplank
 8. Corona with 1 or 2 rows of filaments.
 9. Corona with two rows of subulate filaments _____ **P. araujoii** Sacco
 9. Corona with one row of subulate filaments _____ **P. tholozanii** Sacco
 7. Operculum membranous, fimbriate.
 10. Corona with one row of filaments _____ **P. arta** Feuillet
 10. Corona with two or three rows of filaments.
 11. Corona with two rows of filaments subequal in length _____ **P. compar** Feuillet
 11. Corona with three rows of filaments.
 12. Outermost corona filaments erect, slightly diverging, dark red to violet-black _____ **P. miniata** Vanderplank
 12. Outermost corona filaments erect, converging around the androgynophore, white or red.
 13. Outermost corona filaments red _____ **P. sp.** (Guyana)
 13. Outermost corona filaments white _____ **P. coccinea** Aubl.
 3. Leaves 3–5-lobed.
 14. Bracts fimbriate _____ **P. involucrata** (Mast.) Gentry
 14. Bracts entire, dentate, or serrate.
 15. Bracts more than 10 mm wide.
 16. Stipules 3–5 mm long; third row of the corona tubular _____ **P. vitifolia** var. **bracteosa** (Karsten) Killip
 16. Stipules 6–15 mm long; third row of the corona filamentose _____ **P. margaritae** Sacco
 15. Bracts less than 10 mm wide.
 17. Stipules incised-serrate _____ **P. buchtienii** Killip
 17. Stipules glandular-serrate.
 18. Outer rank of the corona red; operculum fimbriate _____ **P. vitifolia** Kunth
 18. Outer rank of the corona white; operculum crenate or denticulate _____ **P. speciosa** Gardner

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